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REMARKS

Reconsideration is respectfully requested in view of the amendments and remarks herein.

(A) In paragraph 6, Claims 1, 2, 24, 31-34, 40-50, and 54-56 stand rejected under 35 USC 103(a) as obvious over Gutweiler (US 5,573,842) in view of Dauvergne (FR 2,401,941 Abstract), and further in view of Shohi (EP 1036775).

The independent claims rejected in paragraph 6 are claims 1 and 24.

Applicants have amended claim 1 to recite that the polyvinyl butyral bleaching compound is selected from the group consisting of organic bisulfites, inorganic bisulfites and sulfosuccinates. As a result, claim 1 is directed to a very specific process for preparing a low color, polyvinyl butyral sheet comprising the steps: (I) admixing polyvinyl alcohol, butyraldehyde, an acid or mixture of acids, water, and a surfactant; (II) stabilizing the mixture obtained in step (I) by (a) raising the pH of the mixture to at least pH 10, (b) isolating the polyvinyl butyral resin composition by draining the liquid, and (c) washing the polyvinyl butyral resin composition with neutral pH water; (III) plasticizing the polyvinyl butyral resin composition with from about 30 to about 50 pph of plasticizer selected from the group consisting of triethylene glycol di(2-ethylhexanoate), tetraethylene glycol diheptanoate, dibutyl sebacate and mixtures thereof, based on the dry weight of the resin; (IV) mixing (a) a polyvinyl butyral bleaching compound selected from the group consisting of organic bisulfites, inorganic bisulfites and sulfosuccinates, and, optionally, (b) an antioxidant and a UV light stabilizer with the polyvinyl butyral resin composition; and (V) extruding the polyvinyl butyral resin composition at a temperature of from about 175°C to about 225°C to obtain a polyvinyl butyral sheet having a glass transition temperature (T_g) of greater than about 32°C and a YID of less than about 12.

Applicants have also amended claim 24 to recite that the surfactant is selected from the group consisting of organic bisulfites, inorganic bisulfites and sulfosuccinates. A process for preparing a low color, polyvinyl butyral sheet comprising the steps: (I) admixing polyvinyl alcohol, butyraldehyde, an acid or mixture of acids, water, and a surfactant selected from the group consisting of organic bisulfites, inorganic bisulfites and sulfosuccinates; (II) stabilizing the mixture obtained in step (I) by (a) raising the pH of the mixture to at least pH 10, (b) isolating the resin by draining the liquid, and (c) washing the resin with neutral pH water; (III) plasticizing the polyvinyl butyral resin composition with from about 30 to about 50 pph of plasticizer selected from the group consisting of triethylene glycol di(2-ethylhexanoate), tetraethylene glycol diheptanoate, dibutyl sebacate and mixtures thereof, based on the dry weight of the polyvinyl butyral resin; and (IV) extruding the polyvinyl butyral resin composition at a temperature of from about 175°C to about 225°C to obtain a polyvinyl butyral sheet having a glass transition temperature (T_g) of greater than about 32°C and a YID of less than about 12.

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Gutweiler fails to teach a process such as claimed or use of the claimed bleaching compound or surfactant.

Dauvergne fails to teach either of the claimed processes, and teaches use of dodecylbenzene sulphonate as a preferred emulsifier. It doesn't teach use of the claimed bleaching compound or surfactant.

Shoji fails to teach a process such as claimed or use of the claimed bleaching compound or surfactant.

From the above, it can be seen that there is nothing in these cited documents to lead the person of ordinary skill in the art to (a) the specific process steps, or to (b) (i) use a polyvinyl butyral bleaching compound selected from the group consisting of organic bisulfites, inorganic bisulfites and sulfosuccinates as in claim 1 or (ii) to use a surfactant selected from the group consisting of organic bisulfites, inorganic bisulfites and sulfosuccinates as in claim 24. Since the cited patents are missing key elements of the claims, they can not be combined to teach or suggest the invention. Consequently, withdrawal of this rejection is respectfully requested.

(B) In paragraph 9 of the Action, Claims 14-16, 18-21, 23, 56 and 57 stand rejected under 35 USC 102(b) as anticipated by or, in the alternative, under 35 USC 103(a) as obvious over Gutweiler (US 5,573,842).

The main claims to consider here are independent claim 14 and product-by-process claim 56. Claim 14 is directed to a plasticized polyvinyl butyral sheet composition consisting essentially of: polyvinylbutyral; a plasticizer or plasticizer mixture present in an amount of from about 30 pph to about 50 pph, based on the dry weight of the polyvinyl butyral resin; and a compound selected from the group consisting of organic bisulfites, inorganic bisulfites and sulfosuccinates, wherein the sheet has a yellowness index (YID) color of less than 12. Claim 56 is directed to a polyvinyl butyral sheet obtained by the process of any of Claims 1, 24, 26 and 52, and thus the polyvinyl butyral sheet will also contain a compound selected from the group consisting of organic bisulfites, inorganic bisulfites and sulfosuccinates.

Gutweiler does not teach a polyvinyl butyral sheet that contains a compound selected from the group consisting of organic bisulfites, inorganic bisulfites and sulfosuccinates. Therefore, the claims are not anticipated by Gutweiler. Consequently, withdrawal of this rejection is respectfully requested.

(C) In paragraph 10 of the Action, Claims 9-12, 25, 26-30, 35-39, 51-53 and 55 stand rejected under 35 USC 103(a) as obvious over Gutweiler (US 5,573,842) in view of Dauvergne (FR 2,401,941 Abstract), and further in view of Shohi (EP 1036775) as applied with respect to Claims 1-5, 8, 14-19 and 23, and further in view of Degeilh (US 4,696,971).

All of the rejected claims are focused on the bleaching compound or surfactant being a sulfosuccinate, presumably because Degeilh seems to be cited as teaching use of sodium dioctyl sulfosuccinate (DOSS). Degeilh, however, teaches away from the claimed invention.

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That is, Degeilh expressly teaches away from using DOSS in a process involving stabilizing a mixture of the type obtained in step (I) by (a) raising the pH of the mixture to at least pH 10, (b) isolating the resin by draining the liquid, and (c) washing the resin with neutral pH water. Concerning this point, please see (for example) the paragraph at column 2, lines 15-24, where Degeilh states that the Degeilh invention is an improvement over the Dauvergne (FR 2,401,941) process. That is, Degeilh teaches that the process should be carried out with DOSS and neutralizing to pH of no more than 5, not using dodecylbenzene sulphonate in combination with a higher pH as in Dauvergne. Therefore, Degeilh leads away from the claimed invention and cannot be combined with the other documents as in the rejection. Consequently, applicants submit that for this reason alone the rejection is improper and should be withdrawn.

(D) In paragraph 11 of the Action, Claim 22 stands rejected under 35 USC 103(a) as obvious over Gutweiler (US 5,573,842) in view of Dauvergne (FR 2,401,941 Abstract), in view of Shohi (EP 1036775) as applied to claims 14 and 20 above, further in view of an online product brochure from Great Lakes Chemical Corporation. Applicants submit that this rejection should be withdrawn for the reasons presented above and therefore do not address the issues concerning use of an antioxidant at this time.

Amendments to the Claims

The claims are amended as follows.

Claim 1 is amended to recite that the plasticizer is selected from the group consisting of triethylene glycol di(2-ethylhexanoate), tetraethylene glycol diheptanoate, dibutyl sebacate, and mixtures thereof, as supported at page 5, lines 28-29. Claim 1 is amended to recite that the polyvinyl butyral bleaching compound selected from the group consisting of organic bisulfites, inorganic bisulfites and sulfosuccinates, as supported at page 6, lines 16-23.

The reference to mixtures of plasticizers in the amended claims is supported in original claim 14, the Summary of the Invention, and the first full paragraph on page 5 of the specification.

Claim 14 is amended to recite that the plasticizer is selected from the group consisting of triethylene glycol di(2-ethylhexanoate), tetraethylene glycol diheptanoate and dibutyl sebacate, as supported at page 5, lines 28-29. Claim 14 is also amended to recite that the composition comprises a compound selected from the group consisting of organic bisulfites, inorganic bisulfites and sulfosuccinates, as supported at page 6, lines 16-23. The term "compound" is used since this claim does not recite the order of addition. In fact, as pointed out at page 8, lines 9-10, the surfactant or bleaching compound can be the same compound. Claim 14 has been amended to delete reference to optional ingredients, since due to use of the term "comprising" it becomes unnecessary to recite optional ingredients. In addition, since the specific compounds are recited in a Markush group applicants have deleted reference to the functional language at the end of the claim.

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Claim 15 is amended to insert "the" in view of the amendment to claim 14 to include a list of plasticizers.

Claim 18 has been amended to recite the addition of an antioxidant and UV light stabilizers so that it is focused on the preferred embodiment containing these elements.

Claim 20 is amended to use the language of amended claim 14.

Claim 24 is amended to recite that the plasticizer is selected from the group consisting of triethylene glycol di(2-ethylhexanoate), tetraethylene glycol diheptanoate, dibutyl sebacate, and mixtures thereof, as supported at page 5, lines 28-29. Claim 24 is also amended to recite that the composition comprises a compound selected from the group consisting of organic bisulfites, inorganic bisulfites and sulfosuccinates, as supported at page 6, lines 16-23. Claim 24 has been amended to delete reference to optional step, since due to use of the term "comprising" it becomes unnecessary to recite optional step.

Claim 25 is amended to insert "the" in view of the amendment to claim 24 to include a list of surfactants.

Claim 26 is amended to recite that the plasticizer is selected from the group consisting of triethylene glycol di(2-ethylhexanoate), tetraethylene glycol diheptanoate, dibutyl sebacate, and mixtures thereof, as supported at page 5, lines 28-29. Claim 26 has been amended to delete reference to optional step, since due to use of the term "comprising" it becomes unnecessary to recite optional step.

Claim 35 is amended to properly describe the preferred embodiment in view of the deletion of the recitation of the optional step in claim 26.

New claims 58, 64 and 65 is directed to the process of claim 1 wherein the plasticizer is the triethylene glycol di(2-ethylhexanoate), as supported at page 5, lines 28-29.

New claims 59-63 are supported at page 6, lines 16-23.

New claims 66 and 67 are similar to claim 24, and recite the preferred plasticizers described at page 5, lines 22-28.

New claim 68 recites sodium dioctyl sulfosuccinate as the surfactant as supported at page 7, line 21 and page 8, line 15.

Claims 9 and 42-45 are cancelled.

Entry and consideration are respectfully requested.

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In view of the foregoing, allowance of the above-referenced application is respectfully requested. Should any matters remain, the Examiner is invited to telephone the undersigned at the below-listed direct dial telephone number in order to expedite prosecution.

Respectfully submitted,



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